FORM NO. 3311-418

TORO®

MODEL NO. 30570-00001 & UP
MODEL NO. 30573-00001 & UP

**INSTALLATION INSTRUCTIONS**

# 48" SNOWTHROWER WITH ADAPTER KIT

(GROUNDSMAINTENANCE TRACTOR)

Since this instruction sheet covers only a minimal amount of information necessary to maintain and operate your snowthrower, we suggest that you keep this material with your Operator's Manual for the traction unit so that both may be referred to for instructions concerning safe operation and proper maintenance procedures.

PRICE $1.00

# SAFETY INSTRUCTIONS

**This safety alert symbol means CAUTION, WARNING or DANGER — "personal safety instruction". Read and understand the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.**

The following instructions are comparable to the Instructions for Safe Snowthrowing adopted by ANSI — American National Standards Institute B71.3 - 1975.

The 48" Snowthrower is designed and tested to offer reasonably safe service. Failure to operate the machine in accordance with these Safety Instructions MAY RESULT IN PERSONAL INJURY.

## BEFORE OPERATING

1. Read and understand the contents of these Installation Instructions and the Operator's Manual and the Operator's and Service Manual for the Groundsmaintenance Tractor before starting and operating the machine. Become familiar with all controls and know how to stop quickly. A replacement manual is available by sending complete Model and Serial Number to:

The Toro Company
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

2. 425 pounds (193 kg) ballast must be installed into the rear box of the traction unit as forward stability and steering control will be seriously degraded when the snowthrower is in the raised position during operation.

3. Never allow children or adults unfamiliar with its operation to operate the machine, and keep everyone, especially children and pets, away from the area of operation.

4. Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, repair or replace it before operation is commenced. Also tighten any loose nuts, bolts and screws to make sure machine is in safe operating condition.

5. Do not wear loose fitting clothing which could get caught in moving parts. Wearing safety glasses, safety shoes and a helmet is advisable and required by some local ordinances and insurance regulations.

6. Be sure interlock switches are adjusted correctly so engine cannot be started unless traction speed control lever is in neutral position — and implement clutch lever is in DISENGAGE position.

7. Fill fuel tank with gasoline before starting the engine. Avoid spilling any gasoline. Since gasoline is highly flammable, handle it carefully — DO NOT SMOKE.

   A. Use an approved gasoline container.

   B. Fill fuel tank outdoors and only when engine is not running. Engine must be cool to prevent a potential fire hazard.

   C. Wipe up any gasoline that spilled, and install gasoline container cap and machine fuel tank cap securely before starting the engine.

## WHILE OPERATING

8. Do not operate without first installing 425 pounds (193 kg) ballast to the rear box of the traction unit. Forward stability and steering control will be seriously degraded without the weight installed.

9. Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could possibly be deadly.

10. Maximum seating capacity is one person. Never carry passengers.

11. Sit on the seat when starting the engine and operating the machine.

12. When starting the engine:

   A. Engage park lock.

   B. Make sure traction speed control lever is in neutral and implement clutch lever is in disengage position.

   C. After engine is started, release park lock and keep hand off traction speed control lever. Machine must not move. If movement is evident, the neutral return mechanism is adjusted incorrectly; therefore, shut engine off and adjust until machine does not move when traction speed control lever is in neutral position.

13. Using the machine demands attention, and to prevent loss of control:

COPYRIGHT © ALL RIGHTS RESERVED
The Toro Company — 1979
MINNEAPOLIS, MN 55420 — U.S.A.

# SAFETY INSTRUCTIONS

A. Operate only in daylight or when there is good artificial light.

B. Watch for holes or other hidden hazards.

C. Do not drive close to a ditch, creek or other hazard.

D. Reduce speed when making sharp turns and when turning on hillsides.

E. Avoid sudden stops and starts.

F. Before backing up, look to the rear and make sure no one is behind the machine.

G. Watch out for traffic when near or crossing roads. Always yield the right-of-way.

14. Never direct discharge of snow or operate snowthrower near bystanders, glass enclosures, automobiles and trucks, window wells or a drop-off without proper adjustment of the snow discharge angle.

15. If the snowthrower strikes a solid object or the machine vibrates abnormally, disengage implement clutch lever, return traction speed control to neutral, move throttle to slow, set park lock and shut engine off. Remove key from ignition switch and pull high tension wires off spark plugs to prevent possibility of accidental starting. Check snowthrower and traction unit for damage and defective parts. Make all repairs before restarting the engine and operating the unit.

16. Clear snow from slopes by going up and down; never across the face, and use caution when changing directions. Never clear snow from steep slopes.

17. Do not touch engine, muffler or its adjacent shroud while engine is running or soon after it is stopped. These areas could be hot enough to cause a burn.

18. Before getting off the seat:

A. Move traction speed control lever to neutral position and remove hand from lever.

B. Set the park lock and disengage the implement clutch lever.

C. Shut the engine off and remove key from ignition switch. Wait for all movement to stop before getting off the seat.

19. Lower the snowthrower to the ground and remove key from ignition switch whenever machine is left unattended.

## MAINTENANCE

20. Remove key from ignition switch and pull high tension wire off spark plug to prevent accidental starting of the engine when servicing, adjusting or storing the machine.

1. KEEP ALL SHIELDS IN PLACE.
2. BEFORE LEAVING OPERATOR'S POSITION:
   A. MOVE TRANSMISSION SPEED CONTROL LEVER TO NEUTRAL AND LOWER SNOWTHROWER.
   B. SET PARK LOCK.
   C. DISENGAGE ATTACHMENT CLUTCH.
   D. SHUT OFF ENGINE.
   E. REMOVE IGNITION KEY.
3. WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING MACHINE.
4. KEEP BYSTANDERS FROM AREAS BEING CLEARED.

# SAFETY DECALS

**ATTENTION ⚠ WARNING**

- •GARDEZ LES MAINS HORS DE L'EJECTEUR ET DEMEUREZ A L'ECART DE LA TARIERE QUAND LE MOTEUR EST EN MARCHE
- •ARRETEZ LE MOTEUR AVANT TOUT DEBLOCAGE OU ENLEVEMENT DE DEBRIS
- •NE DIRIGEZ JAMAIS L'EJECTEUR VERS AUTRUI
- •KEEP HANDS OUT OF CHUTE AND KEEP CLEAR OF AUGER WHILE ENGINE IS RUNNING
- •STOP ENGINE BEFORE UNCLOGGING OR REMOVING DEBRIS
- •DO NOT DIRECT DISCHARGE AT BYSTANDERS

PART NO. 29-6350

**⚠WARNING**

WHEN OPERATED WITH SNOW BLOWER IN RAISED POSITION, FORWARD STABILITY AND STEERING CONTROL WILL BE SERIOUSLY DEGRADED.

1. GM 52 TRACTION UNIT MUST BE EQUIPPED WITH 5 REAR WEIGHTS PART NUMBER 24-5790 WITH SNOW BLOWER INSTALLED

2. GMT TRACTION UNIT MUST BE EQUIPPED WITH 425 POUNDS (193 KG.) BALLAST IN REAR BOX OF TRACTOR.

GM 72 TRACTION UNIT MUST BE EQUIPPED WITH 4 REAR WEIGHTS PART NUMBER 24-5790 WITH SNOW BLOWER INSTALLED.

SEE SNOW BLOWER MANUAL FOR COMPLETE INSTRUCTIONS.

**⚠ATTENTION**

LORSQUE VOUS OPEREZ AVEC LA SOUFFLEUSE EN POSITION RELEVEE, LA STABILITE ET LA CONDUITE DE L'UNITE EN SERONT DIMINUEES.

1. L'UTILISATION DE LA SOUFFLEUSE A NEIGE REQUIERT 5 POIDS ARRIERE NO 24-5790 SUR L'UNITE DE TRACTEUR GM 52.

2. L'UNITE DE TRACTION GMT REQUIERT UN POIDS DE 193 KG (425 LBS) DANS LA BOITE ARRIERE LORSQU'UTILISEE AVEC LA SOUFFLEUSE A NEIGE.

L'UTILISATION DE LA SOUFFLEUSE A NEIGE REQUIERT 4 POIDS ARRIERE NO 24-5790 SUR L'UNITE DE TRACTEUR GM-72.

POUR PLUS DE DETAILS, CONSULTER LE MANUEL D'INSTRUCTION DE LA SOUFFLEUSE A NEIGE.

PART NO. 39-5020

# TABLE OF CONTENTS


| | Page |
|---|---|
| Safety Instructions | 2-3 |
| Set Up Instructions | 4-10 |
| Adapter Kit Parts Description and Location | 4 |
| Remove Cutting Unit | 5 |
| Assemble Snowthrower | 5 |
| Install Idler Assembly | 5 |
| Install Chute, Jackshaft Assembly, Belt and Wire Harness | 5 |
| Install Tool Bars, U Joint and Lifting Lugs | 6 |
| Install Pipe Plug and Elbow | 6 |
| Install Jackshaft Assembly | 6 |
| Install Snowthrower to Traction Unit | 8 |
| Install P.T.O. Shaft and Extension Springs | 9 |
| Chute Control Switch and Wire Harness Installation | 9 |
| Install Ballast in Rear Box | 10 |
| Operation | 11 |
| Skid Shoes | 11 |
| Maintenance | 11-12 |
| Lubrication | 11 |
| Check Belt Tension | 11 |
| Check Drive Chain Tension | 12 |
| Scraper Blade | 12 |
| Slip Clutch Adjustment | 12 |
| Maintenance Record | 13-15 |
| The Toro Promise | 16 |


# SET UP INSTRUCTIONS

## ADAPTER KIT PARTS DESCRIPTION AND LOCATION

| DESCRIPTION | QTY. | WHERE USED |
|---|---|---|
| Tool Bar, L.H. | 1 | Left snowthrower frame. |
| Tool Bar, R.H. | 1 | Right snowthrower frame. |
| Capscrew, 3/8 NC x 2-1/4" | 4 | Secure Tool Bars to frame. |
| Flange Nut, 3/8 NC | 4 | |
| Eye Bolt | 2 | Each side of tractor and tool bars. |
| Extension Spring | 2 | Connect to eye bolts. |
| Hex Nut, 5/16 NC | 4 | To eye bolts. |
| Jackshaft Assembly | 2 | Install on hinge plate & center of frame. |
| Capscrew, 3/8 x 3/4" | 4 | Mount Jackshaft Assembly to frame. |
| Flange Nut, 3/8 NC | 4 | Secures Jackshaft Assembly. |
| Hinge Plate | 1 | Install on traction unit. |
| Carriage Bolt, 5/16 x 3/4" | 1 | Secure hinge plate to angle support. |
| Angle support | 1 | Install on traction unit. |
| Flange Nut, 5/16 | 6 | Install 1 on carriage bolt, 4 on angle support & Hinge Plate, 1 on P.T.O. to Jackshaft mounting Capscrew. |
| Capscrew, 1/2 x 1-1/4" | 2 | Secure hinge plate to jackshaft assembly. |
| Locknut, 1/2 NC | 2 | Install on capscrews. |
| Capscrew, 5/16 x 3/4" | 4 | Secure hinge plate & angle support to traction unit. |
| Flat Washer | 1 | Install on 3/8 x 3" machine screw. |
| Machine Screw, 3/8 x 3" | 1 | Install through angle support & jackshaft assembly. |
| Hex Nut, 3/8 NC | 2 | Install on 3/8 x 3" Machine Screw. |
| Template | 1 | Establish hole location for hinge plate. |
| P.T.O. Shaft Assembly | 1 | Install onto jackshaft assembly. |
| Capscrew, 5/16 x 2" | 1 | Secures P.T.O. to Jackshaft Assembly. |
| Lifting Lug | 2 | Install onto center of snowthrower frame. |
| Capscrew, 3/8 x 1" | 4 | Secure Lifting Lugs to frame. |
| Flange Nut, 3/8 NC | 4 | |
| Clevis | 1 | Install on Lift Chains & Lifting Lugs. |
| Clevis Pin | 1 | Secure Clevis to Lifting Lugs. |
| Cotter pin | 1 | Secure Clevis Pins. |
| Idler Arm Assembly | 1 | Install onto snowthrower frame. |
| Torsion Spring | 1 | Install onto idler arm. |
| Felt Washer | 1 | Install onto idler arm mount shaft. |
| Flat Washer | 1 | Install over felt washer. |
| Cotter Pin | 1 | Secure idler arm assembly. |
| V-Belt | 2 | Install over pulleys. |
| Muffler Clamp | 1 | Install on steering column. Switch mount. |
| Pipe Plug | 1 | Install in street elbow. |
| 90 Degree Street Elbow | 1 | Install in axle. |

# SET UP INSTRUCTIONS

## REMOVE CUTTING UNIT

1. Lower cutting unit and remove hairpin cotter and clevis pin from lift chain clevis.

2. Remove boot if unit is so equipped.

3. Remove cover over cutting unit drive belt on traction unit and remove belt from pulley.

4. Lift hitch lock rods on traction unit and lock in disengaged position.

5. Pull cutting unit away from traction unit.

## ASSEMBLE SNOWTHROWER

## INSTALL IDLER ASSEMBLY

1. Tip snowthrower up on front of housing and install spring onto idler arm mount shaft (Fig. 1).

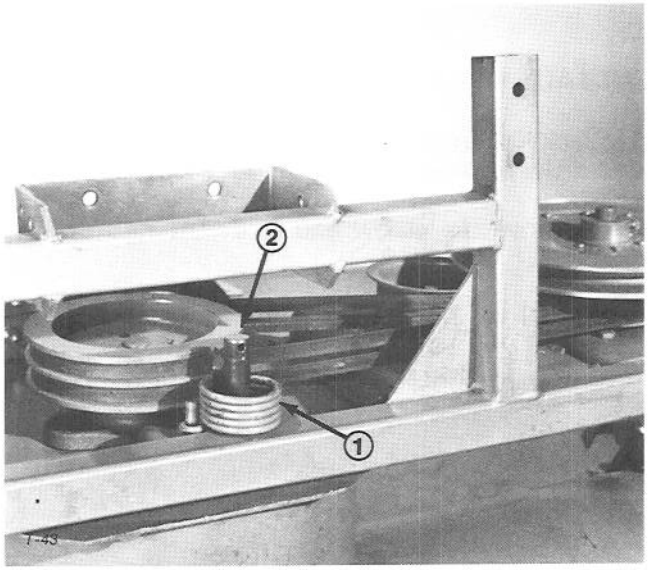


Figure 1

*1. Spring*
*2. Idler arm mount shaft*

2. Install idler arm assembly over shaft and insert top hook in spring through hole in arm (Fig. 2).

3. Install felt washer and flat washer over shaft insert and open cotter pin (Fig. 3). Make sure lower spring hook is around spring anchor (Fig. 3).

## INSTALL CHUTE, JACKSHAFT ASSEMBLY, BELT AND WIRE HARNESS

1. Tip snowthrower down into normal operating position, install chute to housing and secure with three carriage bolts, flat washers and locknuts

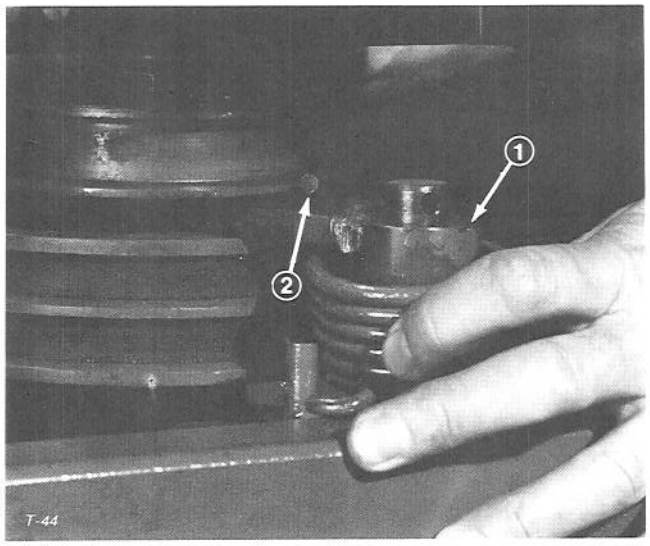


Figure 2

*1. Idler arm assembly*
*2. Top spring hook through hole*

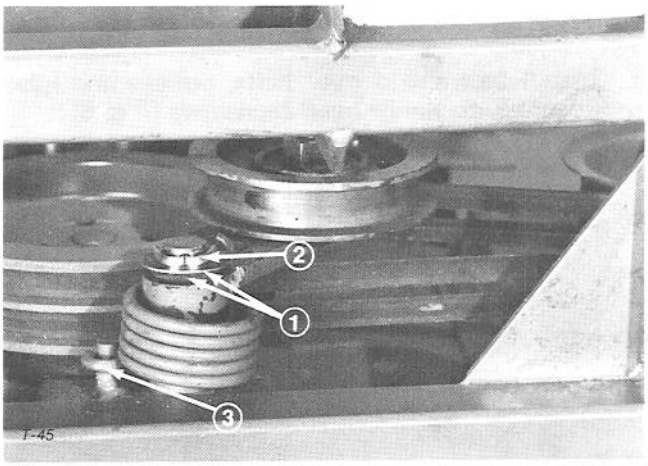


Figure 3

*1. Felt and flat washer*
*2. Cotter pin*
*3. Lower spring hook*

(Fig. 4). Install chute wire inside chute and secure to chute with two pushnuts.

2. Assemble jackshaft assembly to center frame. Do not tighten the mounting capscrews and flange nuts (Fig. 4). Install belt over the pulleys, lever jackshaft towards the left side of snowthrower and tighten jackshaft mounting fasteners (Fig. 4).

**Note:** Left and right hand sides are determined by standing at the rear of the unit.

3. Remove top flange screw for chute drive motor, insert through eyelet of single wire on wire harness and re-install (Fig. 4).

4. Install female wire harness connectors onto spade terminals of motor (Fig. 4).

# SET UP INSTRUCTIONS

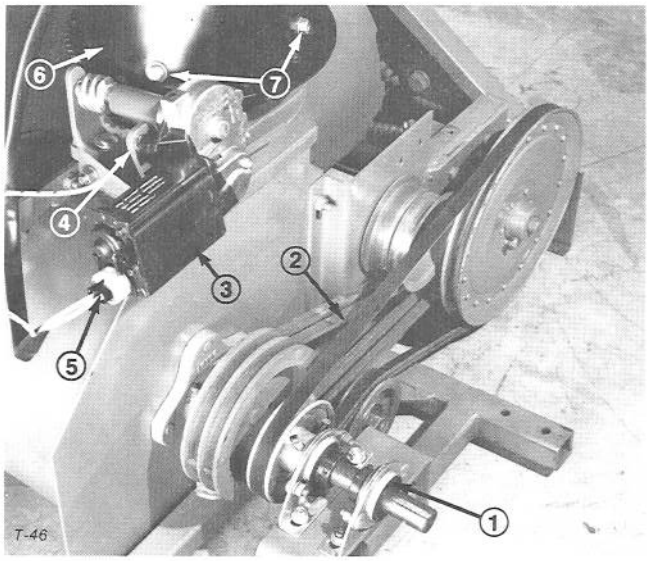


Figure 4

1. *Jackshaft assembly*
2. *Belt*
3. *Chute drive motor*
4. *Flange screw and wire*
5. *Wire harness and connectors*
6. *Chute assembly*
7. *Chute fasteners*

5. Install belt shield over belts, pulleys and idler and secure with flange head capscrews (Fig. 5).

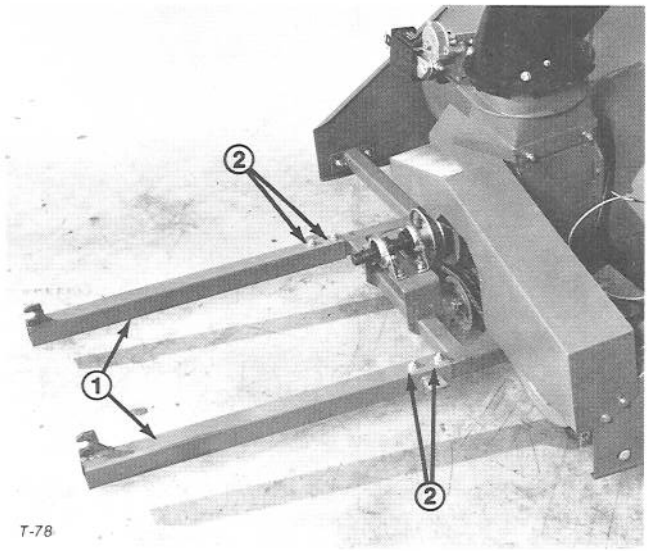


Figure 5

1. *Tool bars*
2. *Capscrews and flange nuts*

## INSTALL TOOL BARS, U JOINT AND LIFTING LUGS

1. Slide left and right hand tool bars onto center snowthrower frame, align mounting holes and secure with capscrews and flange nuts (Fig. 5).

2. Align lifting lugs with mount holes in center frame, insert capscrews and secure with flange nuts (Fig. 6).

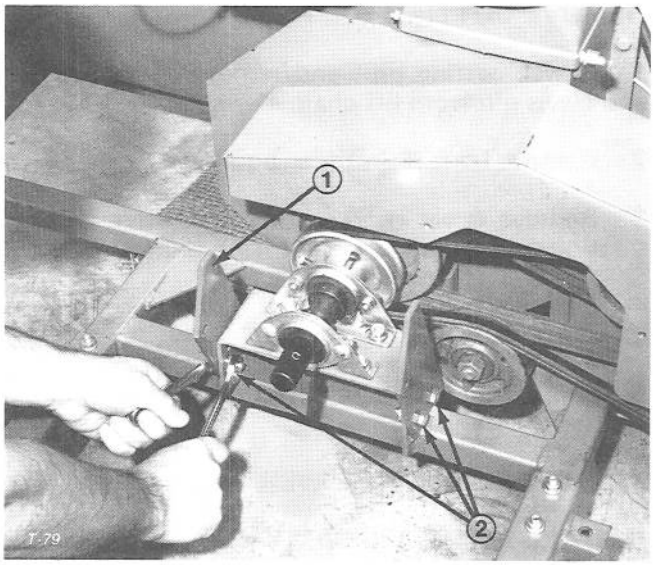


Figure 6

1. *Lifting lugs*
2. *Capscrews and flange nuts*

## INSTALL PIPE PLUG AND ELBOW

1. Jack up front of tractor and install jackstands under the front axle.

2. Remove the elbow and face bushing from the axle.

3. Install a pipe plug and 90 degree elbow (Fig. 7).

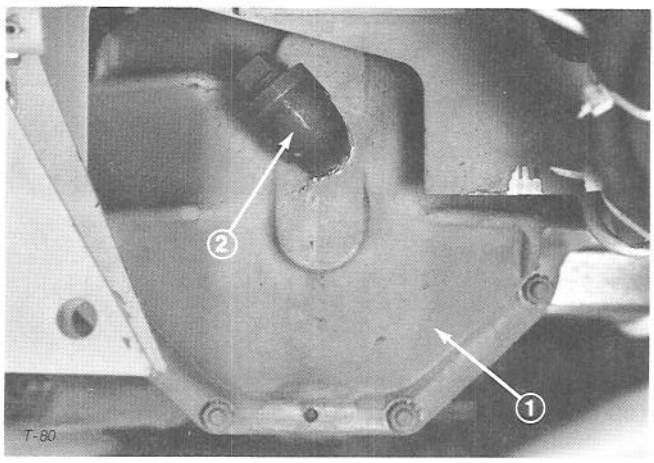


Figure 7

1. *Axle housing*
2. *90 degree elbow*

## INSTALL JACKSHAFT ASSEMBLY

1. Place template against vertical wall beneath lift cylinder (Fig. 8). Assure rear of template is against fire wall and lower edge even with bottom edge of vertical wall (Fig. 8).

# SET UP INSTRUCTIONS

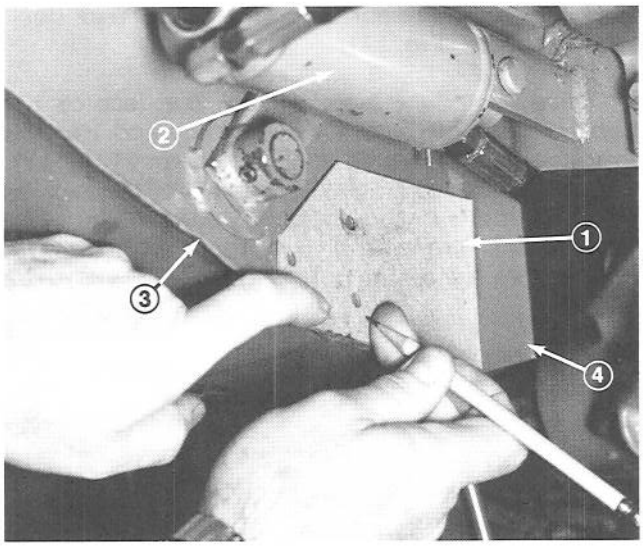


Figure 8

1. *Template*
2. *Lift cylinder*
3. *Vertical wall*
4. *Fire wall*

2. Mark all three hole locations and center punch each mark (Fig. 8).

3. Drill all three holes with an 11/32" drill bit.

**Note:** Either an offset electric drill or hand operated drill will be necessary to drill the holes.

4. Align hinge plate with holes on inside of vertical wall, insert 5/16-18 x 3/4" hex head capscrews through from outside of wall and secure hinge plate to wall with flange nuts against hinge plate (Fig. 9).

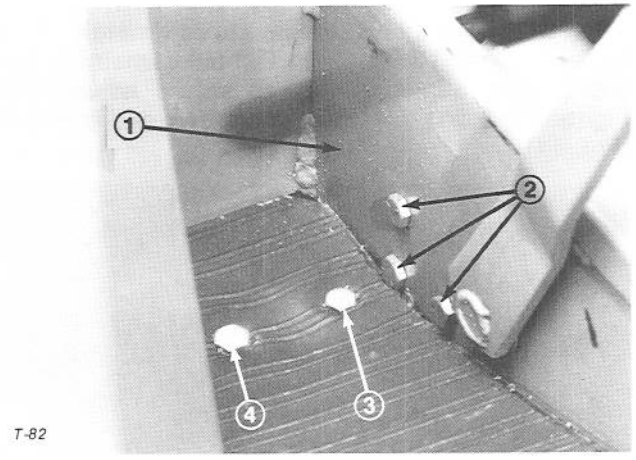


Figure 9

1. *Vertical wall*
2. *Hinge plate mounting capscrews*
3. *Angle support mounting capscrew*
4. *3/8 x 3 inch machine screw*

5. Insert 5/16 x 3/4" carriage bolt through slotted hole in hinge plate from inside toward outside, mount angle support to bolt and loosely install flange nut (Fig. 10).

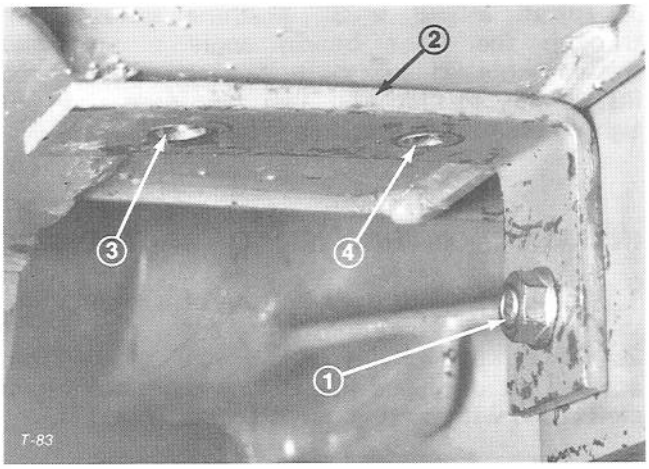


Figure 10

1. *Carriage bolt and flange nut*
2. *Angle support*
3. *Drill a 13/32 inch hole*
4. *Drill a 11/32 inch hole*

6. Slide angle support up against bottom of floor plate and secure flange nut (Fig. 10).

7. Use the two upper holes in the angle support as a guide. Center punch and drill a 13/32" hole in the floor plate through the outside hole in the support and an 11/32" hole through the inside support hole (Fig. 10).

8. Insert a 5/16 x 3/4" capscrew through the inside hole of angle support from top of floor plate and secure with flange nut (Fig. 9).

9. Install belt over pulley on traction unit, mount jackshaft assembly to hinge plate and loosely secure with 1/2 x 1-1/4" capscrews and locknuts (Fig. 11). Slip drive belt over jackshaft pulley (Fig. 11).

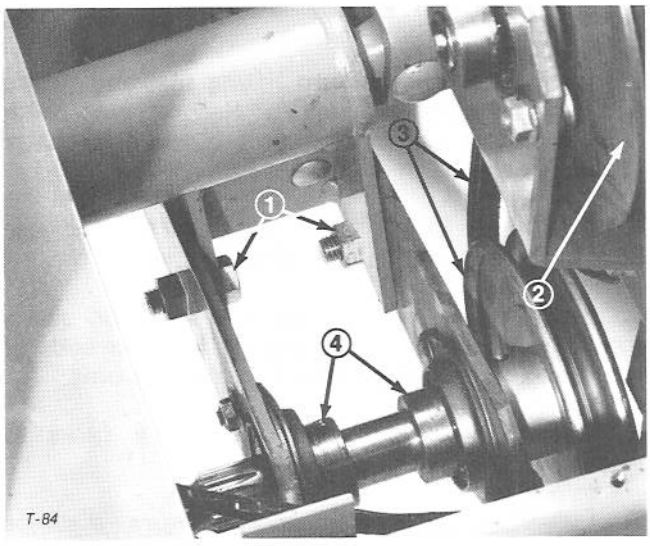


Figure 11

1. *1/2 x 1-1/4 inch capscrews and locknuts*
2. *Traction unit pulley*
3. *Jackshaft pulley and drive belt*
4. *Jackshaft bearing collars*

10. Install a 3/8 x 3" Machine screw down through the floor board, angle support and slotted hole in jackshaft bearing support and install flat washer and two hex nuts. Do not tighten the nuts at this time (Fig. 9).

## INSTALL SNOWTHROWER TO TRACTION UNIT

1. Position snowthrower in front of traction unit.

2. Lower lift chains and install clevis from adapter kit onto end link of one chain and retain clevis used with cutting unit on other (Fig. 12).

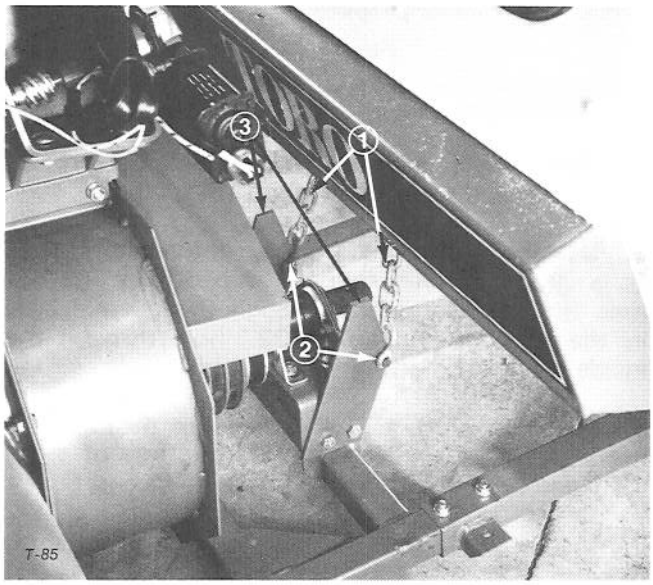


Figure 12

*1. Lift chains*
*2. Clevis*
*3. Lifting lugs*

3. Install each clevis onto lifting lugs and secure with clevis pins (Fig. 12). Secure pins with hairpin cotter on cutting unit clevis and cotter pin on kit clevis pin (Fig. 12).

4. Lift hitch lock rods on traction unit, engage park lock, start engine and raise lift chain.

5. Stop engine, remove ignition key and swing snowthrower rearward to engage forks at ends of tool bars under locking levers on traction unit.

6. Lower hitch lock rods to secure forks to traction unit.

7. Lower snowthrower and measure distance between end of snowthrower input shaft and splined end of traction unit jackshaft (Fig. 13). Distance should measure approximately 10-3/8 inches. If distance is incorrect, loosen locking collars on traction unit jackshaft bearings, adjust shaft to achieve correct dimension and lock bearing collars (Fig. 11).

8. Place a straight edge against the face of the traction unit implement drive pulley and traction unit jackshaft pulley to check alignment (Fig. 13). If pulleys are misaligned, loosen set screws on jackshaft pulley and adjust pulley (Fig. 13). Remove set screws and coat them with Loc-tite #242 before tightening pulley to shaft.

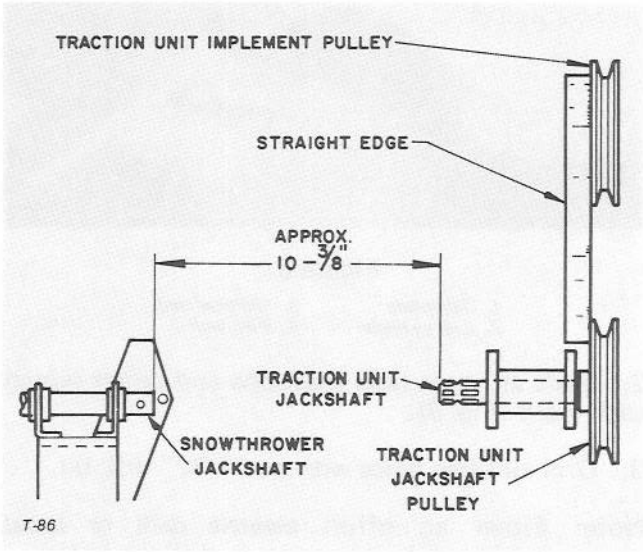


Figure 13

9. Adjust V belt tension. Turn hex nut further onto 3/8 x 3 inch machine screw installed through floor board, angle support and jackshaft bearing support (Fig. 14). Turn nut until there is 5/32 inch deflection of the belt midway between the pulleys when approximately 7 lb force is applied (Fig. 11). Tighten remaining hex nut against adjusting nut to secure adjustment. Tighten 1/2 x 1-1/4 inch capscrews and locknuts (Fig. 14).

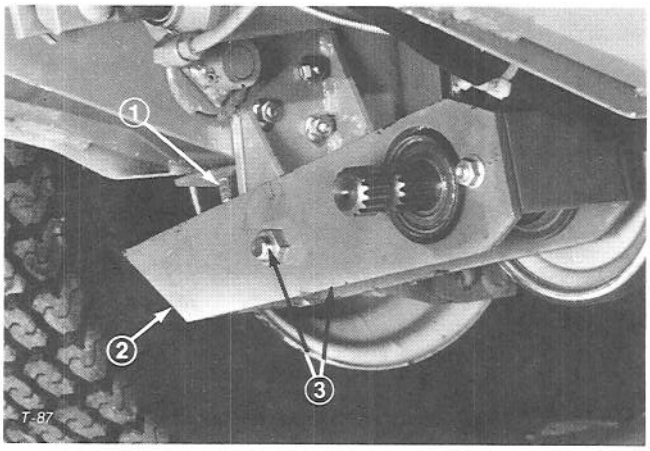


Figure 14

*1. Machine screw*
*2. Jackshaft bearing support*
*3. 1/2 x 1-1/4 inch capscrews and locknuts*

10. Install cover over traction unit implement drive pulley.

## INSTALL P.T.O. SHAFT AND EXTENSION SPRINGS

1. Install universal joint end of shaft onto snowthrower output shaft, pull back on quick disconnect coupler collar on opposite end and install on splined end of traction unit jackshaft (Fig. 15).

Figure 15

1. *Universal joint*
2. *Quick disconnect coupler collar*
3. *5/16 x 2 inch capscrew and flange nut*

2. Align holes in universal joint with snowthrower input shaft and install 5/16 x 2 inch capscrew and flange nut (Fig. 15).

3. Assure park lock is engaged, start engine and raise snowthrower. Hook springs to tabs welded to underside of traction unit closest to front of unit, install eyebolts on opposite spring ends, thread nuts onto eyebolts, insert eyebolts through holes in tool bars and install nuts onto eyebolts (Fig. 16).

4. Adjust spring tension so springs are extended approximately one inch when snowthrower is in the maximum raised position (Fig. 17).

## CHUTE CONTROL SWITCH AND WIRE HARNESS INSTALLATION

1. Assemble muffler and clamp around steering column, mount switch plate onto clamp and install nut onto left side and eyelet end of black harness wire under nut on right side (Fig. 18).

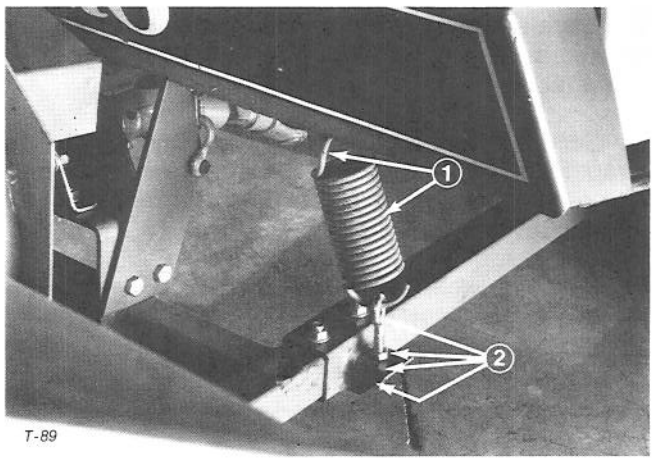


Figure 16

1. *Forward tab and spring*
2. *Eyebolt, nuts and tool bar*

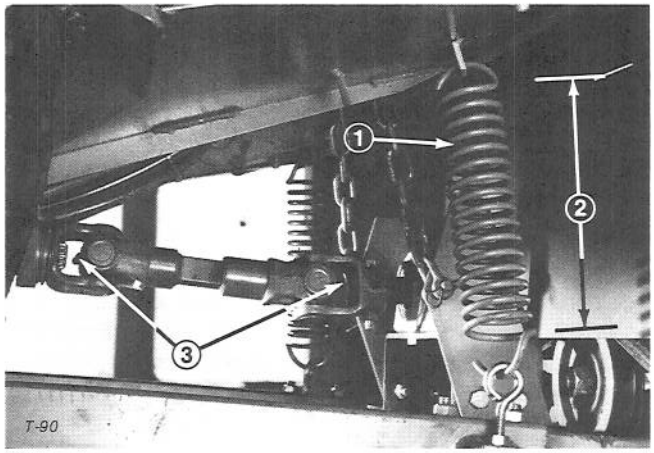


Figure 17

1. *Flotation springs*
2. *Approximately one inch tension with snowthrower raised*
3. *P.T.O. driveshaft grease fittings*

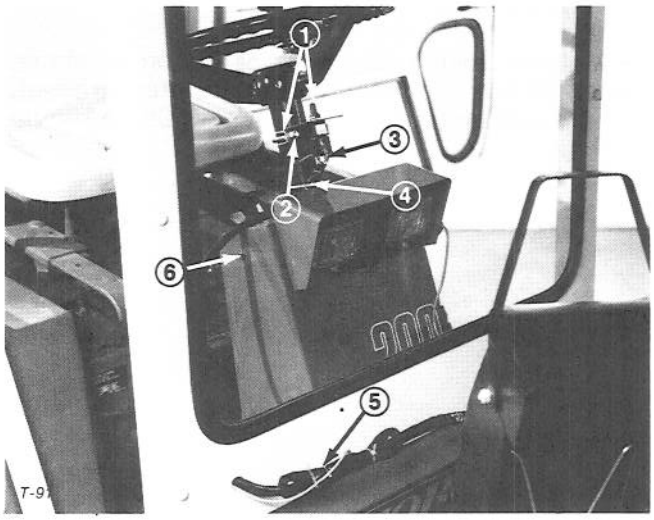


Figure 18

1. *Muffler clamp and switch*
2. *Right hand clamp nut*
3. *Red wire to center terminal*
4. *Tie strap*
5. *Wrap excess wire with tie straps*
6. *Front wrapper mount screw*

# SET UP INSTRUCTIONS

2. Install female wire harness ends onto switch terminals (Fig. 18). Attach red wire to the center terminal.

3. Secure harness to steering column with tie strap (Fig. 18). Loop any excess harness together and secure with tie straps to keep harness clear of moving parts (Fig. 18).

4. Remove seat and transmission cover and remove the negative battery cable from the battery.

**WARNING**

**Remove only the negative cable, not the positive cable, so that sparks, which could ignite hydrogen gas from the battery, will be prevented. Do not smoke.**

5. Remove the front wrapper mount screws and remove the front wrapper (Fig. 18).

6. Route the remaining single red harness wire up through the machine floor plate and connect end to positive (+) terminal of the ammeter. Install a tie wrap around the excess winds of wire to prevent wire from getting caught on steering gear shaft.

7. Install front wrapper, connect negative battery cable to battery and install cover and seat.

8. Apply No. 2 General Purpose Lithium Base grease to chute gear.

9. Actuate switch to check operation of chute. Switch yellow and green wires on motor terminals if chute operates in wrong direction. Chute should rotate to right when switch is actuated to right and to left when switch is actuated to left.

10. Actuate switch and observe mesh of chute gear and chute ring. Chute gear should mesh with ring as close as possible without binding (Fig. 19). Adjust mesh, if necessary, by loosening chute gear fasteners and sliding chute gear mount in or out (Fig. 19).

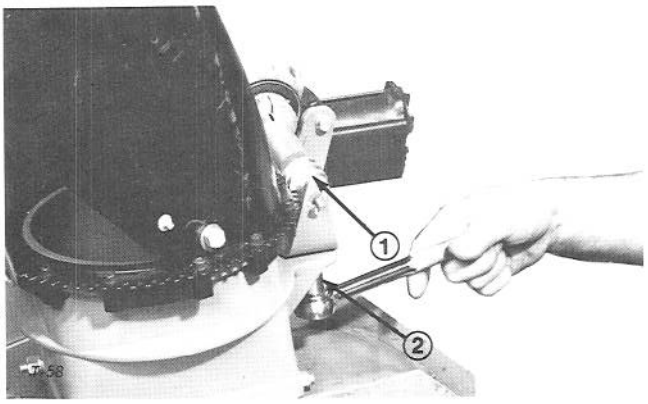


Figure 19

*1. Chute gear*
*2. Chute gear fasteners*

## INSTALL BALLAST IN REAR BOX

**WARNING**

**The Groundsmaintenance Tractor, when operated with the snowthrower in the raised or transport position, will be seriously degraded in forward stability and steering control without the addition of 425 pounds (193 kg) ballast in the rear box of the traction unit.**

# OPERATION

### SKID SHOES

The bottom surface of the skid shoes should be adjusted so they are slightly below the scraper blade (Fig. 20). This allows scraper blade to clear cracks, in concrete, paving, etc. and prevents excessive scraper blade wear (Fig. 20).

**CAUTION**

**Always adjust skid shoes down to allow snowthrower to clear gravel or crushed rock surfaces.**

**CAUTION**

**Never raise implement while auger and impeller are rotating. The exposed, rotating auger is hazardous.**

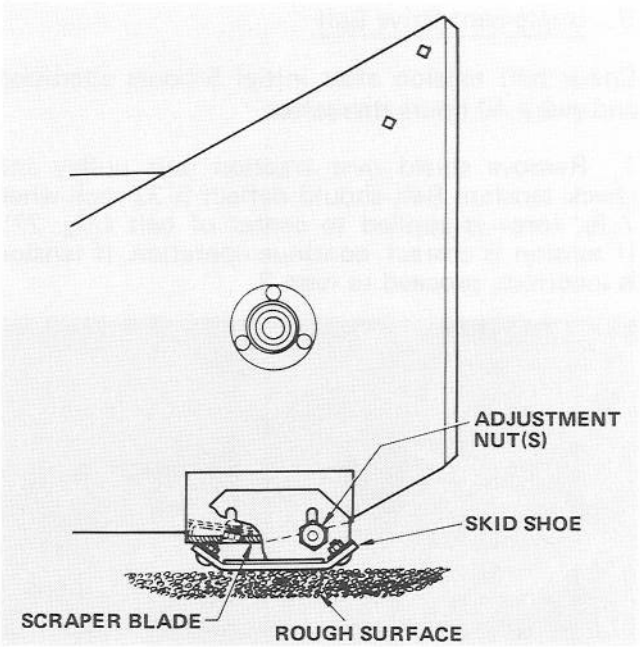


Figure 20

# MAINTENANCE

### LUBRICATION

1. Lubricate the auger drive chain with SAE 30 engine oil after each use (Fig. 21).

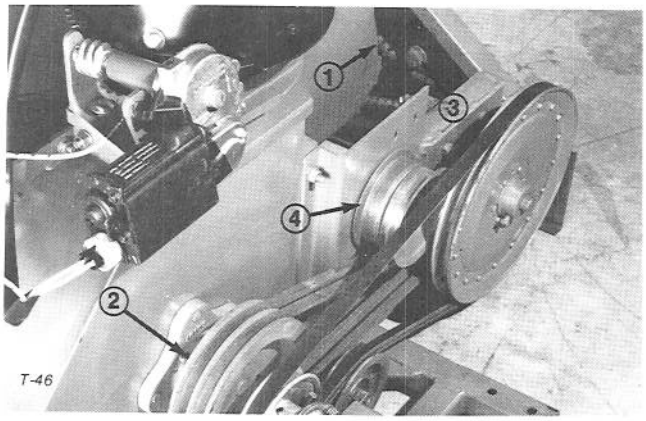


Figure 21

*1. Auger drive chain*
*2. Grease fitting-impeller shaft bearing*
*3. Auger chain idler adjusting bolt*
*4. Impeller drive belt idler pulley*

2. Grease the impeller shaft bearing every 40 hours with No. 2 general purpose Lithium base grease (Fig. 21).

3. At start of each season, disassemble slip clutch and generously lubricate I.D. of sprocket and jaws of slip clutch with Moly EP grease. Reassemble slip clutch and tighten until outside jam nut is flush with sleeve (Fig. 24). Operate unit to check performance. If slip clutch slips excessively, tighten nuts 1/4 turn at a time until unit performs satisfactorily. Do not over-tighten jam nut as the auger may not slip if an obstruction is hit.

4. Grease the two fittings in the P.T.O. drive shaft every 10 hours with No. 2 general purpose Lithium base grease (Fig. 17).

### CHECK BELT TENSION

A. Impeller Drive Belts

After initial 5 hours operation and every 40 hours thereafter, check belt tension.

1. Remove shield and check tension. Belts should have 1/4 inch deflection when 5-6 lb. force is applied to center of belts (Fig. 21). If tension is correct continue operation. If tension is incorrect, proceed to item 2.

2. Loosen locknut securing idler pulley and push down on idler to move it downward in the mounting slot (Fig. 21). Adjust to proper tension and tighten locknut.

3. If idler mounting bolt is bottomed out in the slotted hole in the frame, no further adjustment can be accomplished. Replace the belt.

4. Install shield before continuing operation.

B. Implement Drive Belt

Check belt tension after initial 5 hours operation and every 40 hours thereafter.

1. Remove shield over traction unit pulley and check tension. Belt should deflect 5/32 inch when 7 lb. force is applied to center of belt (Fig. 22). If tension is correct, continue operation. If tension is incorrect, proceed to item 2.

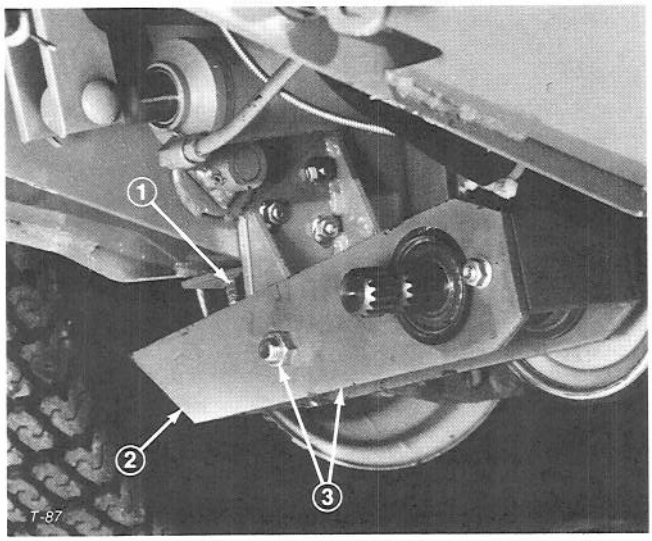


Figure 22

*1. Machine screw*
*2. Jackshaft bearing support*
*3. 1/2 x 1-1/4 inch capscrews and locknuts*

2. Loosen 1/2 x 1-1/4 inch capscrews and nuts, loosen lower nut on machine screw and tighten top nut (Fig. 22). Turn nut until there is 5/32 inch deflection of the belt midway between the pulleys when approximately 7 lb. force is applied. Tighten lower nut against top nut to secure adjustment and tighten 1/2 x 1-1/4 inch capscrews and nuts (Fig. 22).

3. Install shield.

## CHECK DRIVE CHAIN TENSION

Check the tension of the auger drive chain after the initial 5 hours operation and every 40 hours thereafter.

1. Measure deflection on the lower span of the chain (Fig. 21). If deflection is less than 1/4 inch midway between the sprockets, continue operation. If deflection is more than 1/4 inch, proceed to item 2.

2. Loosen adjusting bolt and slide idler downward until proper deflection is obtained (Fig. 21).

3. Replace chain and sprockets when idler can no longer be adjusted.

## SCRAPER BLADE

Check the scraper blade periodically for wear. Reverse the blade when the front edge is worn (Fig. 23). Replace the scraper blade before it is excessively worn to prevent damage to the auger housing.

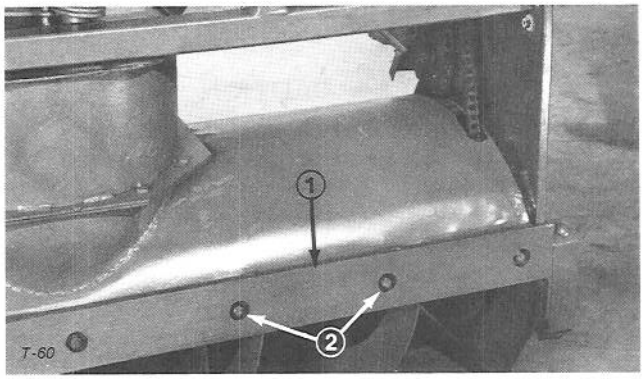


Figure 23

*1. Scraper blade*
*2. Scraper blade fasteners*

## SLIP CLUTCH ADJUSTMENT

A slip clutch is provided to guard against excessive damage should an obstruction be caught between the auger and housing. Should the auger slip excessively during operation, adjust as follows:

1. Remove the outer jam nut (Fig. 24).

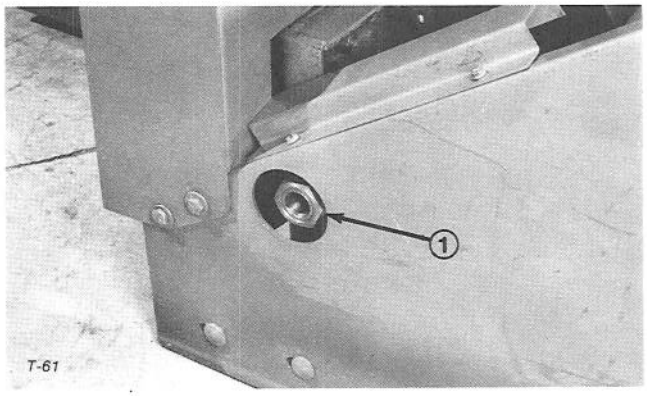


Figure 24

*1. Slip clutch adjustment nuts*

2. Tighten the inner jam nut 1/4 turn, and reinstall the outer jam nut.

3. Operate the snowthrower to make sure the auger operates without slippage. If the auger operates correctly, continue operation. If it continues to slip, repeat items 1 and 2 until the slippage is corrected.

**Note:** Do not overtighten jam nut as the auger may not slip if an obstruction is hit.

# MAINTENANCE RECORD

| Date | Hours Used | Lubrication | Belt Adjustment | Chain Adjustment | Slip Clutch | Scraper Blade Inspection | Summer Storage |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

# MAINTENANCE RECORD

| Date | Hours Used | Lubrication | Belt Adjustment | Chain Adjustment | Slip Clutch | Scraper Blade Inspection | Summer Storage |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

# MAINTENANCE RECORD

| Date | Hours Used | Lubrication | Belt Adjustment | Chain Adjustment | Slip Clutch | Scraper Blade Inspection | Summer Storage |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

# The Toro Promise

*A ONE YEAR LIMITED WARRANTY ON COMMERCIAL PRODUCTS OTHER THAN WALK ROTARY MOWERS*

*The Toro Company promises to repair any TORO Product if defective in materials or workmanship. The following time periods from the date of purchase apply:*

| | |
|---|---|
| Commercial Products . . . . . | 1 Year |
| Hevi-Duty Walk Rotary Mowers . . . . . | 90 Days |

*The costs of parts and labor are included, but the customer pays the transportation costs on walk rotary mowers.*

Should you feel your TORO is defective and wish to rely on The Toro Promise, the following procedure is recommended:

1. Contact your Authorized TORO Distributor (the Yellow Pages of your telephone directory is a good reference source).
2. The TORO Distributor will advise you on the arrangements that can be made to inspect and repair your product.
3. The TORO Distributor will inspect the product and advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without an extra charge to you.

If for any reason you are dissatisfied with the distributor's analysis of the defect or the service performed, you may contact us.

Write:

TORO Commercial Products Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO Distributor is the purchaser's sole remedy for any defect.

THERE IS NO OTHER EXPRESS WARRANTY. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY.

Some states do not allow limitation on how long implied warranty lasts, so the above limitation may not apply to you.

This Warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accidents, or lack of proper maintenance. Regular, routine maintenance of the unit to keep it in proper condition is the responsibility of the owner.

All warranty repairs reimbursable under The Toro Promise must be performed by an Authorized TORO Distributor using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Distributor are not reimbursable under the Toro Promise. In addition, these unauthorized repair attempts may result in additional malfunctions, the correction of which is not covered by warranty.

THE TORO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT INCLUDING ANY COST OR EXPENSE OF PROVIDING SUBSTITUTE EQUIPMENT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## COUNTRIES OTHER THAN THE UNITED STATES OR CANADA

Customers who have purchased TORO products exported from the United States or Canada should contact their TORO Distributor (Dealer) to obtain guarantee policies for your country, province or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the TORO importer. If all other remedies fail, you may contact us at The Toro Company.

International Group
Service Department
One Corporate Center
7401 Metro Boulevard
Minneapolis, Minnesota 55435 U.S.A.

Litho in U.S.A.